

I. THE REPTILES OF THE PULTZER ANGOLA EXPEDITION.

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(PLATES I AND II)

INTRODUCTION.

The Pulitzer Angola Expedition in 1930 and 1931 was primarily interested in the collecting of mammals and birds. Due to the interest of the several members of the party, Mr. and Mrs. Ralph Pulitzer and Mr. and Mrs. Rudyerd Boulton, a considerable number of reptiles were collected and preserved, and these include important additions to our knowledge of the Angolan herpetological fauna. At the instance of Mr. and Mrs. Boulton and of Mr. M. Graham Netting, Curator of Herpetology at the Carnegie Museum, this collection, amounting to 457 specimens, has been loaned to me for study, and I have drawn up the present report upon it. Field Museum retains a series of duplicates, which forms an important addition to its collections of African reptiles.

The collecting stations mentioned in the present report are located on the accompanying map (fig. 1). They are few but are so distributed that there are two in the desert region of Mossamedes, two in the dry savanna of southern Angola, and two in the more humid high-grass region of the central part of the country.

The proportion of endemic forms in the herpetological fauna of Angola is considerable; and as little attention has been paid to it since the publication of the "Herpetologie d' Angola et du Congo" by Bocage, in 1895, it is not surprising that the present collection should contain a number of new species and subspecies. The new forms here described are:

Rhoptropus boultoni
Pachydactylus bibronii pulitzeræ
Lygodactylus lauræ
Varanus albigularis angolensis

I have reduced bibliographic references in the following list to a minimum, and have avoided changes in current nomenclature, in view

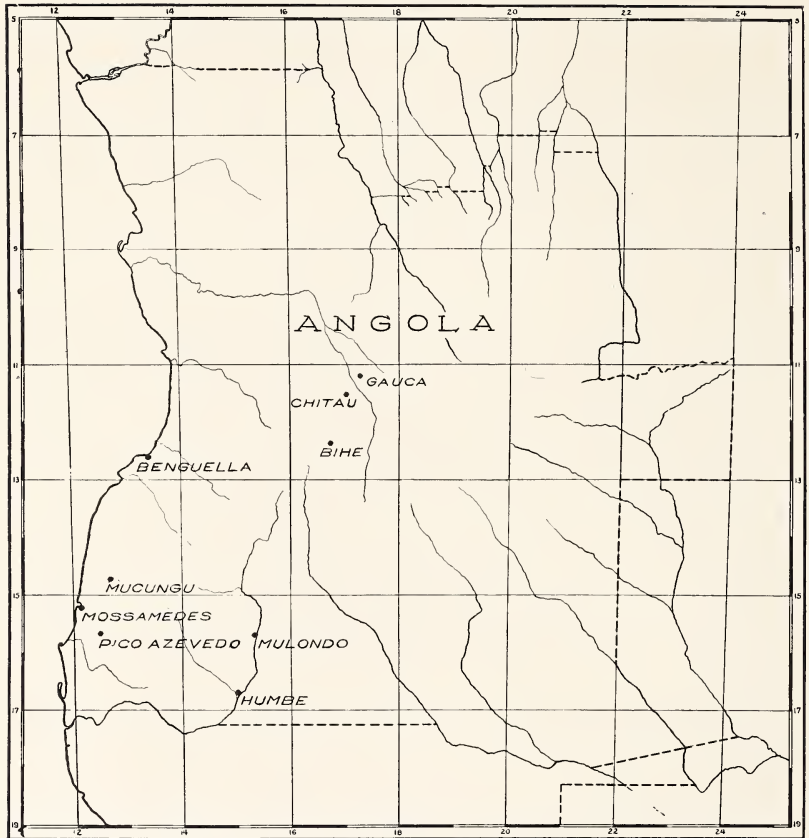


FIG. 1. Map of Angola to show collecting stations, for reptiles, of the Pulitzer Angola Expedition.

of the fact that more comprehensive reports on Angolan herpetology, based on the collections of the Vernay Angolan Expedition in the American Museum of Natural History, are awaited.

The grant of a Guggenheim Fellowship in 1932 enabled me to visit European Museums where, though engaged primarily on other studies, I was able to examine specimens of the genus *Rhoptropus* in the British Museum of Natural History and the Zoologisches Museum of Berlin. My thanks are due to the authorities of these institutions and, especially, to Mr. H. W. Parker at the British Museum and to Dr. Ernst Ahl in Berlin. I am indebted to Mr. Arthur Loveridge, of the Museum of Comparative Zoology, for information on specimens in

his charge; and I have had the advantage, in the preparation of the present report, that the entire African collection of reptiles and amphibians in Field Museum of Natural History has recently passed through Mr. Loveridge's hands for identification or verification of identification.

TESTUDINATA.

1. *Pelomedusa galeata* (Schoepff)

Testudo galeata SCHOEPFF, 1792, Hist. Testud., 12, pl. 3, fig. 1.

Pelomedusa galeata WAGLER, 1830, Syst. Amphib., pl. 2, figs. 36-38.

Six specimens, C. M. Nos. 5964-66, Mucungu; 5969, 5972, Chitau, Jan. 16, 1931; 5973, Gauca, Jan. 10, 1931.

One of these specimens, No. 5972, is a hatchling, with the umbilical scar not yet closed, though the egg-tooth is lost. Its shell measures 25.0 mm. by 19.5 mm. The costal and neural plates are sharply rugose, the marginals and plastrals smooth. The central two-thirds of the plastron is black. No. 5964, with a shell 52.4 x 43.3 mm., appears to be in its second year, but obscure grooves are distinguishable on the plates of the carapace. No. 5969, measuring 91.9 x 72.1 mm., has three sharply defined growth rings, but has also indications of additional rings. Age determination of turtles from the tropics by means of the growth rings appears to be less certain than in turtles of temperate latitudes. In No. 5973, 118.9 x 91.0 mm., the plates are nearly smooth, with growth rings as well as striation almost erased.

2. *Pelusios derbianus* (Gray)

Sternotherus derbianus GRAY, 1844, Cat. Tortoises, 37.

A single specimen, C. M. No. 5970, was collected at Chitau, Jan. 16, 1931.

This specimen, with six growth rings, measures 103.6 x 72.1 mm. in length and breadth of carapace. The plastron is almost entirely yellow, only the portions of the pectoral and abdominal shields which enter the bridge and the small gulars are black.

3. *Pelusios sinuatus sinuatus* (Smith)

Sternotherus sinuatus SMITH, 1838, Ill. Zool. S. Africa, 3, pl. 1.

A single specimen, C. M. No. 5971, was collected at Chitau, Jan. 16, 1931.

This specimen, whose shell measures 150.0 x 100.0 mm., differs from the specimen listed as *derbianus* above in having proportionately larger abdominal shields, plastron completely black, and a bicuspid beak. There are ten or eleven growth rings.

The trinomial is necessitated by the description of *Pelusios sinuatus zuluensis* Hewitt, 1927.

4. *Kinixys belliana* Gray

Kinixys belliana GRAY, 1831, Synopsis Rept., 69.

Four specimens, No. 5968, Chitau, Jan. 16, 1931; and 5974-76, Gauca, Jan. 8-10, 1931.

No. 5975, apparently in its second year, measures 73.3 mm. x 61.8 mm. The carapacial hinge has not appeared. In the three larger specimens the amount of black pigment in the horny shields is variable. The shell of the largest specimen, No. 5968, measures 197 x 128 mm. No. 5974 has a tick attached at the hinge on one side, while No. 5976 has a tick at this place on each side.

SAURIA.

5. *Hemidactylus longicephalus* Bocage

Hemidactylus longicephalus BOCAGE, 1873, Journ. Sci. Lisboa, 4, 210.

Two specimens, C. M. Nos. 5724 and 5932, from Gauca, Jan. 8-10, 1931.

6. *Lygodactylus capensis capensis* (Smith)

Hemidactylus capensis SMITH, 1838, Ill. Zool. S. Africa, 3, pl. 75, fig. 3.

Two specimens, C. M. Nos. 5649-50, collected at Mucungu. The pale coloration of these specimens and the irregularly enlarged subcaudal scales of No. 5649 (the tail being lost in the second specimen) suggest that an Angolan race of *L. capensis* may be distinguishable when sufficient material is examined. Both of these specimens have the five preanal pores normal for *capensis*.

7. *Lygodactylus lauræ*, sp. nov.

Type.—Carnegie Museum No. 5860, collected at Chitau, Bihe District, January 12, 1931, by Rudyerd and Laura Boulton.

Diagnosis.—Allied to *Lygodactylus capensis* in having the mental plate 3-lobed; distinguished by larger scales on the under surfaces of the thighs, and preanal pores 9 to 10 instead of 5.

Description of type.—Body slightly depressed, snout pointed; mental 3-lobed; upper labials 8, lower labials 6; the anterior of the two scales above the nostril larger; scales of under side of tail irregularly enlarged but no enlarged median series; preanal pores 9; dark gray above, with obscure darker vermiculation, pale beneath (in formalin specimens).

Paratypes.—C. M. Nos. 5861-62, collected at Chitau, Jan. 12, 1931, and Nos. 5933-34, from Gauca, Bihe District, Jan. 8, 1931, are in excellent agreement with the type.

Remarks.—Bocage notes a specimen from Cahata, collected by Anchieta, with 9 preanal pores which, therefore, clearly belongs to this form, among the series referred by himself to *Lygodactylus capensis*.

8. *Pachydactylus punctatus brunnthaleri* Werner

Pachydactylus brunnthaleri WERNER, 1913, Denkschr. Akad. Wiss. Wien, **88**, 718.

Pachydactylus punctatus brunnthaleri HEWITT, 1926, Ann. S. African Mus., **20**, 478.

A single specimen, C. M. 5618 from Pico Azevedo, is referred to this species on account of its complete agreement with the supplementary description of Werner in his account of the Reptilia and Amphibia in Michaelsen's "Beitrag zur Kenntniss der Land- und Süsswasser fauna Deutsch-Südwestafrikas," 1915. The type locality is Buluwayo, South Rhodesia.

9. *Pachydactylus lævigatus* Fischer (Plate I)

Pachydactylus lævigatus FISCHER, 1888, Jahrb. Hamb. Wiss. Anst., **5**, 15, pl. 2, fig. 3.

Two specimens, C. M. Nos. 5621 and 5623, from Pico Azevedo have the flat unkeeled tubercles of this species. On account of its occurrence with *P. bibronii*, and with the subspecies of *P. bibronii* described below as its representative in Angola, it does not seem likely that *lævigatus* is to be regarded as a subspecies of *bibronii*.

10. *Pachydactylus stellatus* Werner

Pachydactylus bibronii var. *stellata* WERNER, 1909, Denkschr. Jena, **16**, 308.

Two specimens, C. M. 5647 and 5961, collected at Mulondo, November 18 and 25, 1930, agree in having much more stellate tubercles

on the head and back than is the case with *P. bibronii* from Cape Colony and the Bechuanaland Protectorate, and are in the same way distinct from *P. bibronii pulitzeræ*. I am unable to understand its distribution on the hypothesis that it is a subspecies of *bibronii*. Obviously a distributional study and revision of the genus *Pachydactylus* would be productive of results of the greatest interest.

11. *Pachydactylus bibronii pulitzeræ*, subsp. nov. (Plate I)

Type.—Carnegie Museum No. 5619, Oct. 9, 1930, collected at Pico Azevedo by Rudyerd and Laura Boulton.

Diagnosis.—Larger and less strongly tuberculate than *Pachydactylus bibronii bibronii*; occipital area almost smooth, covered with flat tubercles.

Description of type.—Habitus stout, limbs short, head broad and triangular; postnasal and frontal hollows distinct; ear opening about half as wide as high; three prominent, laterally directed tubercles in front of ear; upper labials eleven, lower labials nine; mental elongate, slightly longer and narrower than the adjacent lower labials; ten lamellæ on the third toe and on the third finger; dorsal tubercles sharply keeled, in sixteen straight longitudinal rows, the vertebral line with a double row of much smaller ones; middle of head behind eyes almost entirely smooth, without keeled or stellate tubercles; three strong laterally directed tubercles at the base of the tail on each side. Brownish gray above, paler beneath; scattered, sharply defined, white spots, mostly on single tubercles on the back; on the shoulders these are grouped on a black horseshoe which extends from one arm to the other, the most prominent white spots being above the insertion of the arm.

Paratypes.—C. M. Nos. 5620, 5622, from the type locality, agree excellently with the type in structure, but lack the conspicuous white spots, which are perhaps characteristic of the coloration of the breeding male.

Remarks.—The smooth non-tuberculate crown of this form is not approached among the twenty-eight specimens of *P. bibronii bibronii* available for comparison with the Angolan material. These come from various localities in the Bechuanaland Protectorate, collected for Field Museum by the Vernay-Lang Kalahari Expedition.

12. *Rhoptropus barnardi* Hewitt (Fig 2 and Plate I)

Rhoptropus barnardi HEWITT, Ann. S. African Mus., 20, 413, pl. 35.

Four specimens, C. M. Nos. 5651-5654, from Mucungu agree with the description and figures of *R. barnardi*, the type locality of which

is Eriksson's Drift, on the Cunene River, *i.e.* near the Angolan border of Southwest Africa.

These specimens have a row of enlarged chin shields adjacent to the anterior lower labials and mental, and a single scale between the characteristically swollen nasals. Three are pale gray with five transverse rows of black spots, four spots in each row, while the fourth specimen has only the spots above the shoulder.

In the two cotypes of *Rhoptropus afer* in the Zoologisches Museum in Berlin, from Damaraland, there are no enlarged chin shields, three scales between the nasals, and scattered smaller black spots, not arranged in transverse series. Two additional specimens from Damaraland, one in the British Museum and one in the Senckenbergisches Museum in Frankfurt-a-M., agree completely with the cotypes and thus differ from *barnardi*.

Six additional specimens of *Rhoptropus barnardi* in the British Museum come from Mossamedes, Mossamedes District, and from Manconjo and Huxe Sierra, Benguella District. Still another specimen in the Zoologisches Museum agrees with *barnardi* and comes from Biballa, Benguella. These are all like *barnardi* in the presence of a row of small but distinct chin shields. Six of these specimens are colored essentially like the Mucungu specimens; the seventh (from Mossamedes) has small scattered black spots like *afer*, but as it agrees with the other Angolan specimens in the presence of enlarged chin shields, it cannot be regarded as anything but *barnardi*. *Rhoptropus afer* remains little known, and an adequate series of this species is necessary to clear up its exact relations with *barnardi*.

13. *Rhoptropus boultoni*, sp. nov. (Fig. 2 and Plate I.)

Type.—Carnegie Museum No. 5634, ♂, collected at Pico Azevedo, Mossamedes, Oct. 9, 1930, by Rudyerd and Laura Boulton.

Diagnosis.—Digits and swollen nostrils and uniform lepidosis of *Rhoptropus*; distinguished from *barnardi* and *afer* by larger size, dark coloration, larger number of lower labials, and strap-shaped instead of wedge-shaped first lower labial.

Description of type.—Head pointed ovate, limbs long; dorsal scales uniformly granular, a little larger and flatter on the snout; ventral scales flat, scarcely imbricate; swollen nostrils separated by a single scale; upper labials 12-13, lower labials 8-8; lamellæ beneath the third finger 11+9, beneath the fourth toe 13+9; anterior lower labials remarkably elongate, strap-shaped, bordered by a distinct series of

chin shields; tail verticillate at base, the verticils three scales long at base, with no transverse median scales on the first five verticils; beyond this there are enlarged and transversely widened scales on the under side of the tail to the tip, with no evidence that any portion of it is reproduced; five preanal pores; coloration dark gray, with obscure clouded markings, limbs lighter.

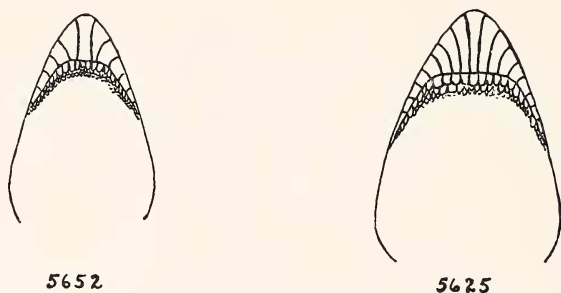


FIG. 2. Lower labials and chin shields of *Rhoptropus barnardi* (left), compared with *Rhoptropus Boultoni* (right). ($\times 1\frac{1}{2}$).

Measurements.—Length 133 mm.; body 66 mm.; hind limb 33 mm.; forelimb 24 mm.; snout to posterior border of ear 18 mm.; width of head 14 mm.; knee to knee 37 mm.

Paratypes.—Carnegie Museum Nos. 5624-33 and 5635-46, all from Pico Azevedo, agree so closely that it is clear that *Rhoptropus Boultoni* is a species fully distinct from *R. barnardi*, which is found on all sides of Pico Azevedo. The only clue to a difference in habits or to habitat association which would account for the existence of so closely allied a form within the range of its congener, lies in the fact that at Pico Azevedo outcrops of rock appear in the otherwise uniform sand and scrub desert. It is likely, therefore, that *Rhoptropus Boultoni* lives in rock crevices or beneath boulders and has thus been isolated ecologically from *Rhoptropus barnardi*.

Remarks.—The genus *Rhoptropus* was originally monotypic, with *Rhoptropus afer* Peters, 1869, as the only species. In 1885 Boulenger described *Rhoptropus ocellatus*, from Capetown, and this species was rediscovered by Prof. Max Weber at Klipfontein, Little Namaqualand, and remarked upon by Roux (1907, *Zool. Jahrb. Syst.*, 25, 412). Roux proposes, tentatively, that *Rhoptropus* should be united with *Phelsuma* on account of the general agreement of *R. ocellatus* with that genus. Examination of the type of *R. ocellatus* in the British Museum quite justifies Roux's remarks, for it must unquestionably be trans-

ferred to *Phelsuma*; but this has nothing to do with the validity of *Rhoptropus*, which is amply distinguished by its vertical pupils, swollen nasals with nostrils separated from rostral and labials, greatly elongate lower labials, short series of preanal pores, and other characters. Boulenger's reference of *Dactylichikion braconieri* to the synonymy of *Rhoptropus afer* is questioned by Hewitt, who regards *braconieri* as a valid species of *Rhoptropus*; it may be so retained until its relations can be cleared up by means of further material. Eliminating *Phelsuma ocellata* (Boulenger), the species of *Rhoptropus* are:

Rhoptropus afer Peters, type locality Damaraland.

Rhoptropus braconieri Thomassinot, type locality Lake Ngami, Bechuanaland Protectorate.

Rhoptropus barnardi Hewitt, type locality Eriksson's Drift, Cunene River, South West Africa.

Rhoptropus boultoni, sp. nov., type locality Pico Azevedo, Mosamedes, Angola.

14. *Agama planiceps* Peters

Agama planiceps PETERS, 1862, Monatsber. Akad. Wiss. Berlin, 1862, 15.

One specimen, C. M. No. 5617, from Pico Azevedo, Oct. 9, 1930, and nine, Nos. 5694, 5833-35, 5837, 5839, 5842-43, and 5845, from Chitau, Jan. 12-16, 1931.

15. *Agama anchietæ anchietæ* Bocage

Agama anchietæ BOCAGE, 1896, Jorn. Sci. Lisboa, (2), 4, 129.

Seventy-two specimens of this species, collected as follows: 5697-5710, 5793-5831, 5836, Chitau, Jan. 12-16, 1931; 5726-29, 5923-26, Gauca, Jan. 8-10, 1931. The trinomial is necessitated by the description of two related forms, *methueni* and *knobeli*, by Boulenger and Power. The present Angolan specimens are in excellent agreement with their diagnosis of the typical form (Boulenger and Power, 1921, Trans. Roy. Soc. S. Africa, 9, 268).

16. *Agama atricollis* Smith

Agama atricollis SMITH, 1849, Illustr. Zool. S. Africa, 3, Appendix, 14.

Eight specimens, C. M. Nos. 5695-6, 5832, 5838, 5840-41, 5844, 5846, all collected at Chitau, Jan. 12-16, 1931.

17. *Chamæsaura miopropus* Boulenger

Chamæsaura miopropus BOULENGER, 1894, Proc. Zool. Soc. London, 1894, 732.

A single specimen, C. M. 5919, Chitau, Jan. 14, 1931, is referred to this species with some hesitation. *C. miopropus*, described from Fwambo, Nyasaland, might well prove to be one of the numerous savanna forms whose area of distribution borders the Congo Forest on the south, paralleling the east-west range of so many Sudanese species to the north of the forest. The present specimen agrees with *miopropus* in possessing monodactyle hind limbs and extremely minute vestiges of forelimbs; it differs in having 24 scales around the body in place of 26. As both *C. anguina* and *C. tenuior* have been shown to have from 24 to 26 scale rows around the body, the same range of variation may be expected in *miopropus*. The *C. macrolepis* from Angola recorded by Bocage may be referable to *C. miopropus*.

18. *Varanus albigularis angolensis*, subsp. nov. (Plate II.)

Type.—Carnegie Museum, No. 5967, ♂, collected at Gauca, Bihe, January 10, 1931, by Rudyerd and Laura Boulton.

Diagnosis.—A *Varanus* closely allied to *Varanus albigularis* of Cape Colony and the Bechuanaland Protectorate, in body form and scale characters, especially the small nuchals, but distinguished by having larger scales everywhere on the body so that the scales around the body are about 125 instead of 150, and the transverse rows of scales from the collar to thighs are 75 instead of 100.

Description of type.—Habitus stocky, tail round at base, flattened and with a slightly serrate keel for most of its length, tip round; abdominal scales smooth, seventy-four from collar to groin; no transversely enlarged supraoculars; nostril an oblique slit, three times more distant from the tip of the snout than from the eye; nuchal scales little enlarged, 18 in the first head-length; ear opening large; 127 scales around midbody; 53 scales around the tail at the 40th verticil; color dark gray with obscure darker and lighter patches, and with a few scattered groups of light gray or yellow scales; belly and under sides of limbs and tail yellow, invaded by the gray color from the sides; throat and chin black.

Measurements.—Length 1125 mm.; tail 650 mm.; snout to occiput 82 mm.; snout to posterior border of ear 90 mm.; width of head 55 mm.; arm 143 mm.; leg (about) 190 mm.

Paratype.—A single specimen in Field Museum, No. 12971, collected at Kabengere, Belgian Congo, by J. T. Zimmer, 1926, agrees remark-

ably with the Angolan specimen; it has 125 scales around mid-body, 75 scales from gular fold to groin, and 56 scales in the 40th caudal verticil.

Remarks.—Specimens of *V. albigularis* in the Museum of Comparative Zoology from Durban, Natal, and Somkele, Zululand, agree with specimens in Field Museum of Natural History, from the Bechuanaland Protectorate, in having 100 or more scales from gular fold to groin. In the one Zululand specimen and four from the Bechuanaland Protectorate the number of scales around the body ranges from 150 to 165, which is very distinct from the 125 to 127 of *angolensis*; in the specimen from Durban, however, the maximum count is about 137. In the Bechuanaland specimens the scales in the 40th caudal verticil range from 61 to 72, compared with 53 to 56 in *angolensis*.

The small nuchal scutes of this form relate it so clearly to *albigularis* rather than to *exanthematicus*, that I am inclined to give up the subspecific arrangement for the African savanna species of *Varanus* which I proposed in 1919 (Bull. Amer. Mus. Nat. Hist., 39, 480). *Varanus albigularis angolensis*, however, fits excellently into the general scheme of distribution of African reptiles, in which the remarkable east-west savanna fauna in the Sudan is paralleled by a related but specifically wholly distinct series in the savannas from Angola to the Katanga south of the rain-forest.

19. *Ichnotropis bivittata* Bocage

Ichnotropis bivittata BOCAGE, 1866, Journ. Sci. Lisboa, 1, 43.

Sixteen specimens of this well marked species, C. M. Nos. 5725, 5927-28, Gauca, Jan. 8-10, 1931, and 5847-59, Chitau, Jan. 12, 1931.

20. *Gerrhosaurus flavigularis nigrolineatus* Hallowell

Gerrhosaurus nigrolineatus HALLOWELL, 1857, Proc. Acad. Nat. Sci. Philadelphia, 1857, 49.

Gerrhosaurus flavigularis nigrolineatus STERNFELD, 1912, Wiss. Ergeb. Deutsch Zentral Afrika Exped., 4, 224.

Three specimens, C. M. 5922, Gauca, Jan. 8, 1931, and 5791-2, Chitau, Jan. 12, 1931.

21. *Mabuya bayonii* (Bocage)

Euprepes bayonii BOCAGE, 1872, Journ. Sci. Lisboa, 4, 75.

Sixteen specimens, C. M. 5736, 5738-39, 5935, 5937, 5939-40, 5943, from Gauca, Jan. 8-10, 1931, and 5866, 5869, 5880-81, 5890-91, 5893, and 5902 from Chitau, Jan. 12, 1931.

22. **Mabuya striata** (Peters)

Tropidolepisma striatum PETERS, 1844, Monatsber. Akad. Wiss. Berlin, 1844, 36.
Mabuia striata BOULENGER, 1887, Cat. Lizards Brit. Mus., 3, 204.

Thirty-seven specimens of this species are all from the high grass savanna: C. M. Nos. 5863-5, 5867-68, 5870-79, 5882, 5885-89, 5892, 5894-5901, 5903-4, Chitau, Jan. 12, 1931, and 5936, 5938, 5950, 5952, Gauca, Jan. 8, 1931.

23. **Mabuya varia** (Peters)

Euprepes (Euprepis) varius PETERS, 1867, Monatsber. Akad. Wiss. Berlin, 1867, 20.

Mabuia varia BOULENGER, 1887, Cat. Lizards Brit. Mus. 3, 202.

One hundred and fifteen specimens, all from the high grass savanna region, like the last species; C. M. Nos. 5671, 5731-5, 5737, 5740-64, 5883, Chitau, Jan. 12-16, 1931, and 5730, 5941-2, 5944-9, 5951, 5953-60, 5962-3, Gauca, Jan. 6-10, 1931.

24. **Mabuya punctulata** (Bocage)

Euprepes punctulatus BOCAGE, 1872, Jorn. Sci. Lisboa, 4, 76.

Mabuia punctulata BOULENGER, 1887, Cat. Lizards Brit. Mus. 3, 204.

A single specimen, C. M. 5648, from Mucungu.

25. **Mabuya chimbana** Boulenger

Mabuia chimbana BOULENGER, 1887, Cat. Lizards Brit. Mus. 3, 204.

A single specimen, C. M. 5655, from Humbe, Nov. 13, 1930.

26. **Chamæleo dilepis** Leach

Chamæleo dilepis LEACH, 1819, in Bowditch, Miss. Ashantee, 493.

Seventy-seven specimens, C. M. Nos. 5657-70, 5672-93, 5711, 5765-90, Chitau, Jan. 12-16, 1931; 5723, 5929-31, Gauca, Jan. 8-10, 1931.

SERPENTES

27. **Helicops bicolor** (Günther)

Limnophis bicolor GÜNTHER, 1865, Ann. Mag. Nat. Hist., (3), 15, 96, pl. 2, fig. C.

Helicops bicolor BOULENGER, 1893, Cat. Snakes Brit. Mus., 1, 274.

Three specimens, C. M. Nos. 5912-13, 5990, from Chitau, Jan. 14-16, 1931. In these specimens, all females, the dorsal scales are uni-

formly 19-17, the upper labials 8-8, the lower labials 10-10, the oculars 1-2, and the temporals 0-1-2 on each side; the ventrals and subcaudals are respectively 131, 137, 135 and 48, 49, and 49.

28. **Boædon lineatus** Duméril and Bibron

Boædon lineatus DUMÉRIL and BIBRON, 1854, Erpet. Gen., 7, 363.

A single specimen, C. M. No. 5916, from Chitau, Jan. 14, 1931; a female, ventrals 198, caudals 64, upper labials 8-8, lower labials 9-9; oculars 2-2, and temporals 1-2 on each side; dorsal scales 25-27-19.

29. **Lycophidion capense capense** (Smith)

Lycodon capensis SMITH, 1831, S. African Journ. Sci., 1, No. 5, 18.

Four specimens, three from Chitau, C. M. Nos. 5713, 5917, and 5992, Jan. 14-16, 1931, and one from Gauca, C. M. No. 5921, Jan. 8, 1931. In two females from Chitau, the ventrals are 180 and subcaudals 28 in each. The male specimen from Gauca has 171 ventrals and 37 caudals. The head shields are uniform in all four, with eight upper and eight lower labials; oculars 1-2, and temporals 1-2 on each side.

30. **Philothamnus semivariiegatus** Smith

Philothamnus semivariiegatus SMITH, 1849, Illustr. S. African Zool., 3, pls. 59, 60, and 64.

A single specimen, C. M. No. 5994, from Chitau, Jan. 16, 1931. A male with dorsal scales 15-11, ventrals 191, subcaudals 125, upper labials 9-9, and lower labials 10-10; preoculars 1-1, postoculars 2-3; temporals 2-2 on each side. A small specimen of *Mabuya striata* was found in the stomach.

31. **Crotaphopeltis shrevei** Loveridge

Crotaphopeltis shrevei LOVERIDGE, 1932, Proc. Biol. Soc. Washington, 45, 83.

A single specimen of this recently described species agrees very closely with the unique type, which came from Bella Vista. The Carnegie Museum specimen, No. 5911, from Chitau, Jan. 14, 1931, a male, has 216 ventrals, anal single, 82 caudals, 8 upper and 10 lower labials, oculars 1-2, and temporals 1-1; the total length is 925 mm., tail 185 mm.

32. **Psammophis sibilans** (Linnæus)

Coluber sibilans LINNÆUS, 1758, Syst. Nat.

Psammophis sibilans BOIE, 1827, Isis, 1827, 547.

A single specimen, C. M. No. 5905, Chitau, Jan. 14, 1931, a female with dorsal scales 17-13, ventrals 166, caudals 92, upper labials 8-8, lower labials 9-10, oculars 1-2 on each side, and temporals 2-2 and 2-3; total length 1400 mm., tail 404 mm.

33. **Psammophis angolensis** (Bocage)

Amphiphis angolensis BOCAGE, 1872, Journ. Sci. Lisboa, 4, 82.

Psammophis angolensis BOULENGER, 1891, Proc. Zool. Soc. London, 1891, 307.

A single specimen, C. M. No. 5656, from Humbe, collected Nov. 13, 1930; a female, dorsal scales 11-11-11, ventrals 152, subcaudals 82, upper and lower labials 8-8; oculars 1-2 and temporals 2-2 on each side.

34. **Dispholidus typus** (Smith)

Bucephalus typus SMITH, 1829, Zool. Journ. 4, 441.

Dispholidus typus BOULENGER, 1896, Cat. Snakes Brit. Mus., 3, 187, fig. 14.

Eight specimens, C. M. Nos. 5906, 5907, 5909, and 5986-89, from Chitau, Jan. 14-16, 1931.

35. **Elapsoidea guentheri** Bocage

Elapsoidea guentheri BOCAGE, 1866, Journ. Sci. Lisboa, 1, 70, pl. 1, fig. 3.

A single specimen, C. M. No. 5914, ♀, Chitau, Jan. 14, 1931; dorsal scales 15-13, ventrals 150, subcaudals 20, upper and lower labials 7-7, oculars 1-2 and temporals 1-2 on each side; 28 transverse light lines on the body and 4 on the tail, which really correspond to the 14-2 dark cross-bars which are subequal to the slightly paler interspaces; total length 321 mm., tail 24 mm.

36. **Naja nigricollis** Reinhardt

Naja nigricollis REINHARDT, 1843, Vidensk. Selsk. Skrift., 10, 269, pl. 3, figs. 5-7.

A single specimen, C. M. No. 5908, Chitau, Jan. 14, 1931; ♂, dorsal scales 23-19-13, ventrals 206, caudals 63, upper labials 7-7, lower labials 8-8, oculars 1-3 on each side, temporals 1-3 and 2-2; length 1395 mm., tail 239 mm.

37. Dendraspis angusticeps (Smith)

Naja angusticeps SMITH, 1849, Illustr. Zool. S. Africa, 3, pl. 70.

Dendraspis angusticeps GÜNTHER, 1838, Cat. Snakes Brit. Mus., 238.

Two male specimens, C. M. Nos. 5977-78, from Mulondo, November 1930; dorsal scales 21-23-17 in both; ventrals 265 and 263, subcaudals 113 and 122, upper labials 8, lower labials 11-11 and 12-12; oculars 2-2, and temporals 2-3, in No. 5977, 3-4 and 2-4 in No. 5978; total length and length of tail respectively 2480 and 615 mm., and 2365 and 515 mm. A female specimen, No. 5910, from Chitau, Jan. 14, 1931, has dorsal labials 8, lower labials 12, oculars 2-4, and temporals 2-4.

38. Causus rhombeatus Lichtenstein

Sepedon rhombeatus LICHTENSTEIN, 1823, Verz. Doubl. Mus. Berlin, 106.

Causus rhombeatus GRAY, 1849, Cat. Snakes Brit. Mus., 33.

Five specimens, C. M. Nos. 5720, 5915, 5920, 5991, and 5993, from Chitau, Jan. 14-16, 1931.

39. Atractaspis congica Peters

Atractaspis congica PETERS, 1877, Monatsber. Akad. Wiss. Berlin, 1877, 616, fig. 2.

A single specimen, ♀, C. M. No. 5918, collected at Chitau, Jan. 14, 1931, has dorsal scales 17-19-15; ventrals 221; caudals 20, of which 5 are entire; upper labials 5-5, lower labials 6-6; oculars 1-1; temporals 1-2 on each side; and total length 292 mm., with tail 15 mm.

40. Bitis arietans (Merrem)

Vipera (Echidna) arietans MERREM, 1820, Tent. Syst. Amphib., 152.

Bitis arietans GÜNTHER, 1858, Cat. Snakes Brit. Mus., 268.

Sixteen specimens, C. M. Nos. 5712, 5714-19, 5721, 5722, 5979-85, from Chitau, Jan. 14-16, 1931.

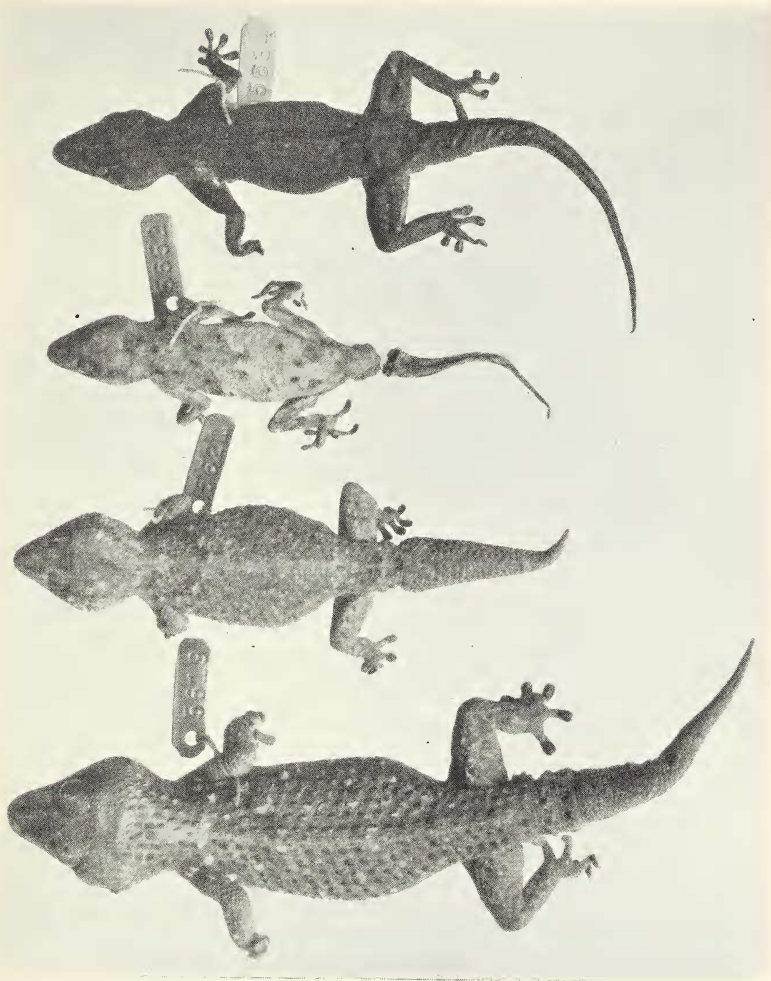


PLATE I. From left to right, *Pachydactylus bibronii pulitzeræ* (type), *Pachydactylus levigatus*, *Rhoptropus barnardi*, and *Rhoptropus boultoni* (type).

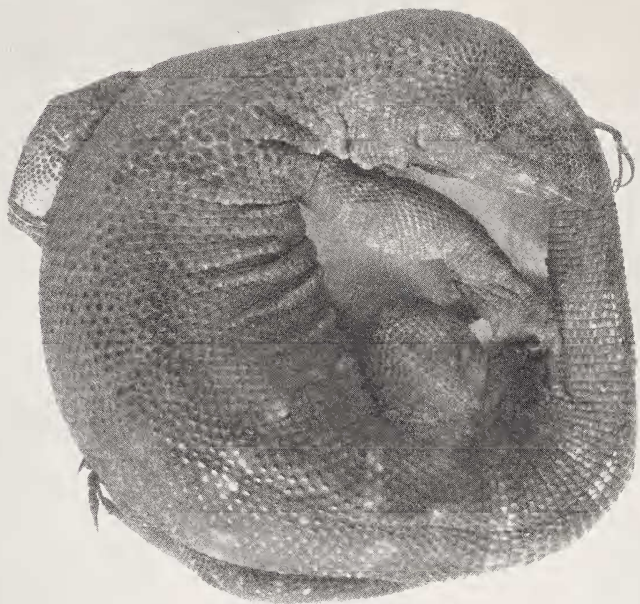


PLATE II. Type of *Varanus albigularis angolensis*.